

REMARKS

In the previous Response to Arguments, the Examiner noted "that the features upon which applicant relies are not recited in the rejected claims." The above amendment of claim 1, the sole independent claim seeks to more clearly recite these distinguishing features.

Claim 1 calls for a variable delay line comprising a plurality of fibers, each fiber having ends disposed in linear arrays, a first parallel region, a curved region and a second parallel region. Significantly, the curved regions of respective fibers differ in radii of curvature to provide a series of monotonically different path lengths.

The primary reference to Murray et al. is superficially similar but differs in important respects. The Examiner is correct that the fibers in Murray have aligned ends, parallel regions and curved regions. What Murray does not have, however, is curved regions that differ in radii of curvature to provide a series of monotonically different path lengths. To the contrary, Murray's curved regions are substantially identical. See Fig. 4.

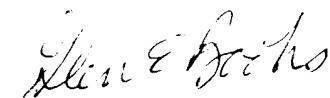
This seemingly small difference is important. In applicant's device the differences in path lengths between successive fibers is determined by the different curvatures (radii of curvature) of successive fibers. Because the curvatures can be well controlled, very fine resolution variable delay lines can be readily made. In Murray's device where the curved regions have the same radii, the difference in path length between successive fibers is determined by the cut length of the fiber. Resolution is limited by the limitations in cutting fiber to prescribed length. As the present applicants have pointed out (specification, p.2, lines 4-7):

"Cutting fibers to a precision of millimeters is difficult, and this difficulty limits the achievable accuracy of delay time. Moreover, a variable delay line having a large dynamic range will require many precisely cut fibers. It is not practical to provide sufficient precisely fibers to provide fine delay increments... over a large dynamic range."

Since neither Murray nor any of the other cited references teach or suggest a variable delay line where differing radii of curvature provide a series of monotonically different path lengths, they do not make obvious the invention of claim 1 or the remaining claims dependent thereon.

In view of the foregoing, claims 1-11 patentably distinguish from the prior art. Accordingly, this case now fully complies with the provisions of 35 U.S.C. Section 103 and is now in condition for allowance. Reconsideration and favorable action in this regard are therefore earnestly solicited

Respectfully submitted,



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AMENDED CLAIM SHOWING CHANGES MADE

IN THE CLAIMS:

Amend claim 1 to read:

1. A variable optical delay line comprising:
 - a plurality of fibers, each fiber having a first end disposed in a first linear array and a second end disposed in a second linear array, [and a curved region between the first end and the second end,] each fiber comprising a first parallel region, a curved region, and a second parallel region; the first parallel regions of the fibers parallel to each other, the second parallel regions of the fibers parallel to each other and the curved regions of respective fibers differing in radii of curvature to provide a series of monotonically differing path lengths; and
 - an optical switch for switching at least one optical input signal among the fibers of the plurality.